REMARKS

Status of the Claims

Claims 1-38 were pending.

Claims 1-38 were rejected.

Please **amend** claims 8 - 11, 26-31, 33-38.

It is believed that the remarks laid out herein below attend to all rejections and further issues raised in the pending office action dated 27 July 2007.

Claim Objections

The Examiner objected to claims 26-31 and 33-38 for being method claims directed to apparatus claims. Claims 26-31 and 33-38 have been amended.

Claim Rejections

Claim Rejections Under 35USC102

Claims 1-8, 10-15, 17-20, 22-23, 25-28, 30-35, 37-38 were rejected under 35USC102(e) as allegedly being anticipated by Dantu et al. (US2006/0233137).

Claim 1 includes the following features:

the access node receiving over a *plurality of channels*, indicators from at least one upstream access node, the indicators providing information of selected upstream paths between *each of the upstream access nodes and upstream gateways*; and

the access node determining an optimal set of routing paths between the access node and at least one upstream gateway, based upon the indicators, *the*

optimal set of routing paths including a combination of paths over multiple channels.

In contrast, Dantu teaches a wireless-specific router topology that provides a distributed architecture in which call processing including call setup, resource preservation, air bandwidth allocation, switching, soft handoff, and micromobility is performed at the cell level. The wireless router may include a first interface operable to communicate wireless packets for a call with a remote device and a second interface operable to communicate wireline packets for the call with the wireline network.

Dantu shows (Figure 2) multiple routers 30 connected by multiple *links* 32. Dantu shows (Figure 3) and describes *multiple virtual tunnels* (such as, tunnels 70, 72) that are included within a single wireless router link 32.

Applicant disagrees with the Examiner's rejections for the following reasons:

1.   Dantu shows and describes routers connected to other routers through multiple links, not multiple channels.

Each of the routers 30 of Figure 2 of Dantu are connected to each other router 30 through a single link 32. Each router may have multiple links to other routers 30, but there is only a single link 32 between each pair of routers 30.

The claimed invention includes the access node receiving over a plurality of channels, indicators from at least one upstream access node. The routers of Dantu only receive signals over a single channel.

A link is a connection (wired or wireless) between two devices. Channels are different modes of communicating. For example,

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different channels can be defined by different transmit frequencies, or as described in applicant's specification, different standards, such as, 802.11(b) and 802.11(g).

2.   The links of Dantu each include only one of different possible channels, whereas the applicant's links can include multiple channels. The Examiner references paragraph 0051 of Dantu and suggest that a plurality of channels is suggested. Dantu states in paragraph 0051 "In the wireless network 10, each wireless router 30 provides *a* radio frequency (RF) link for mobile devices 44 ... " Dantu does not teach or suggest providing multiple radio frequency links. The list of channels suggested (TDMA, IS-95 ...) are merely possible channels that can be used – one at a time, not simultaneously. Therefore, Dantu cannot be construed to receive signals over multiple channels. Dantu includes multiple links, not multiple channels. Applicant's specification provides examples of links and channel in the description of the mesh networks of Figures 4 and 5.

3.   The multiple channels of Figure 3 of Dantu are virtual tunnels, not transmission channels. The virtual tunnels 70, 72, include control channels 74a, 74b, 76a, 76b which are all within the link 32. The virtual tunnels provide management information. These are not transmission channels. However, even if they were, there is no way that indicators that provide information of selected upstream path can be received through the plurality of virtual tunnels of Dantu.

4.   Dantu does not provide indicators that include information of multiple paths to a gateway, wherein the multiple paths comprise multiple channels.

Paragraph 0096 describes an IP forwarding table 270 that includes a destination IP address, outgoing interface ID for primary and secondary routers, outgoing port ID for primary and secondary routers, data link address for primary and secondary routers, hop count associated with destination for primary and secondary routers and multicast indicator. The secondary routers are use in response to the failure of the primary router.

Figure 15 shows a primary wireless router 378, secondary routers 382 and LSPs 386. The LSPs are control signals.

The IP forwarding table 270 provides forwarding information between routers. The IP forwarding table 270 *does not* provide information regarding multiple channels of links of routing paths of the routers.

Claims 1, 17, 25, 32 are patentable over Dantu. Claims 2-16, 18-24, 26-31, 33-38, are directly or indirectly dependent on claims 1, 17, 25, 32. Therefore, claims 2-16, 18-24, 26-31, 33-38 are patentable over Dantu as well.

Regarding claim 2, Dantu suggest types of channels that could be used, but not channels that are used simultaneously.

Claim 8 has been amended to include the beacons being transmitted over multiple channels. Dantu does not suggest beacons being transmitted over multiple channels, wherein the beacons are indicators that include information of selected upstream paths between each of the upstream access nodes and upstream gateways.

Claim 9 has been amended to include "wherein beacons that are received by the
upstream access nodes having a persistence above a threshold are
rebroadcast by the upstream access nodes over multiple channels after
the beacons have been modified to include selected upstream routing
information of the upstream access nodes, the upstream access nodes
selecting the optimal set of routing paths based on a persistence of the
successfully received beacons." The amendments are supported in the
specification (see page 7, first full paragraph, page 9, second paragraph,
page 10, last paragraph, and page 12).

As previously described, Dantu includes a routing protocol that is
communicated to routers though routing messages. There is no teaching
or suggestion, nor is it an obvious over Dantu to have access nodes only
rebroadcast beacons being received with a persistence above a threshold.
Additionally, there is no teaching or suggestion, nor is it an obvious over
Dantu to select the optimal set of routing paths based on a persistence of
the successfully received beacons.

Claim 10 has been amended to include "wherein the access node receives
indicators over a plurality of channels from single upstream access
node." Dantu includes each link having only a single channel.
Therefore, there is no way that Dantu suggests receiving indicators over
multiple channels of a single link between an access node and an
upstream access node. The amendments are supported by the discussion
of Figure 4.

Claim 11 has been amended to include "selected upstream paths between each
upstream access node and upstream gateways include a combination of
paths, over multiple channels, and upstream paths are selected based on
a persistence of successfully received broadcast and rebroadcast

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beacons. The features of multiple channels and persistence of successfully received beacons is not taught or suggested by Dantu.

Regarding claim 15, applicants cannot identify anything in paragraph 0093 that suggests an indicator is modified, or that it is transmitted over multiple channels.

Regarding claim 25, this claim is directed to *an access node* that includes a plurality of radios. The Examiner appears to be trying to combine the mobile devices 44 of Dantu with the routers 30 to yield the access node of the claimed invention. Claim 25 is directed to an access node that includes the radios, not to an access node and a plurality of mobile devices. The radios of claim 25 receive over a plurality of channels, indicators from at least one upstream access node, the indicators providing information of selected upstream paths between each of the upstream access nodes and upstream gateways. The access node that *includes the radios* additionally determining an optimal set of routing paths between the access node and at least one upstream gateway, based upon the indicators, the optimal set of routing paths including a combination of paths over multiple channels. The mobile devices 44 and/or the routers 30 of Dantu to not individually or combination include the features of claim 25.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 9, 16 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Dantu.

For the purpose of the following discussion, the Examiner is respectfully reminded of the basic considerations which apply to obviousness rejections.

When applying 35 U.S.C. §103, the following tenets of patent law must be adhered to:

(A) The claimed invention must be considered as a whole;

(B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

(C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

(D) Reasonable expectation of success is the standard with which obviousness is determined. MPEP §2141.01, *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1134 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

Regarding claim 9, this claim has been amended as described above. By originally giving old claim 9 a 103 rejection, the Examiner has already admitted that there are differences between the old claim 9 and the cited reference. The amendments to claim 9 make the differences even greater. The amendments to claim 9 where not made to avoid the cited art, merely to provide additional distinguishing differences.

Regarding claim 16, this claim additionally includes sending a reverse beacon to the gateway; and constructing a client tree in the gateway, wherein the gateway has at least one path including multiple channels to all clients. Dantu provides the router with the routing tables. Dantu does not teach the access nodes selecting the routes. Therefore, there is no reason for the routers of Dantu to send a reverse beacon to a gateway, allowing the gateway to construct a client tree. Therefore, it is not obvious to modify Dantu to send reverse beacons.

CONCLUSION

For the reasons given above, and after careful review of the cited reference, applicant respectfully submits that none of the cited references result in, teach or suggest applicant's claimed invention.

In view of the above Remarks, applicant has addressed all issues raised in the Office Action dated 27 July 2007, and respectfully solicits a Notice of Allowance for claims 1-38. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Respectfully submitted,

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